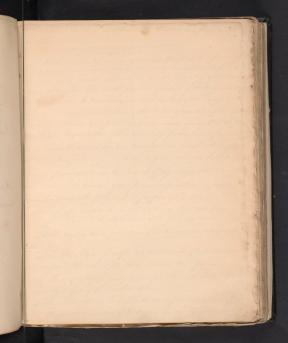
1440 - March 30.1013 And Inaugural desertation on theo Influence of certain causes on the decarbonating function of the Jungs -6. 6. Fearson 1813 The second second

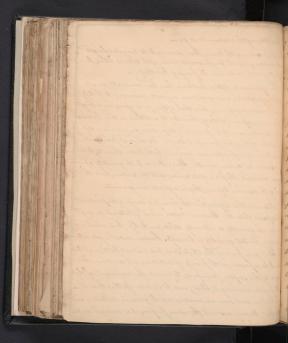




On Certain course which influences the elicaborating functions of the In the various departments of natural knowledge the influence of the dates appeal advancement in Chamberle Science, has been red moved felt; and this in fluence has by no means, withhet from the physiology of the Unimal body . It has shed light on the functions of several of the organ, in this human economy, but on no one so much as that of the Jungs -Since the succeofal investigation of the Matine of one atmosphere going knowledge of the uses of respectations has advances apaces. Coto the free-Just highly Respected State of this knowledge proon, how important and curious the subject has been considered, and with what assidu it it has been pursued. Without giving an intire history of the trogrep of investigations in this branch of physiology, I shall briefly State what is the Unount of our french information Drespecting it, and then proceed to apply it to the persons of this essay . The latest experiments on this pubject on their of days attentitipes the Twent of the folours is the establishment of the Juliving conclusion, Sot The impired air empacts none of its argune for Mitrogene bother Tothe blood loves a fremit to viz carbone, which by its umon with the organic of the inhalis die forms carbonic acid gus . -3. The watery vapour found in the rapine du, is the serous dicharge from the surface of the bronchial tubes -If the Blood deriver heat from the decompositions of the insperied air, all the latent heat of the Oxygene gas not being necessary to



the formation of the autonic acid gay .-I The dark colon of the tenen blood is owing to the being purchanged with carbon ; and the bright stouth caton of the within the book of its parting with cubones in the process of breathing . -The experiments of those Gentlemen have been conducted on a much laugusteale, and with more vigilant indeavour, to fortify against all sources of croon, than those of their pud cepors and they had a more improved state of chemitry to aid them in their labourg. This conclusions as to the products of Krepuntion, are not widely life ent Spenthon of brawford Lavorier & Lary, Torthe most from Mant circumstances of respirations was considered by the lutter Chemists, to be the separation of culon from the blood , But as to the quantity of Organi consumed, the place of its union with the carbon, and the Jource of the agueous bapour, there is a quater disagreement. Awould then appear that the principal design of Be purchase is to separate from the bloods a Matter, which if letaines in any considerable quantity, is extremely deletions to life; but which in a cutain limited quantity is harmless. Carbon enters largely into the blood as a part of the Chyle; and but a small portion of it sums to be infunded in the process of Mutortions and secretions. The design of this suplus puhaps is, to promote the conversion of chile into prefect animalized blood; and to assist in effecting then de= - composition and new-combination, which occur in nutrition and decition. Having answered the above purpose this conseque out



of the System chiefly through the lungs. Carton is then an excretion, a time which was first applied to it by Tropper Correpthis University. He considered its separation from the blood mot as a secondary Cucumstance, and one, Muchy instrumental both production of animal that; but as aprocess premarily and in dolf essential Jothe healthy condition of the animal machine -Having given this preparatory stateto of what occurs in perpetuing sproceed to state a conjecture, which I shall endeavoute support in the subsequent part of this alsay Viz . that there an cutain circumstances affecting Insperation, which subject the human systems to such a retention of the Cubon of the blood, as to be Mortid, and cause desangement and disease, Jam not to be considered as speaking of those sudden, and absolute interruptions of the Junctions of the lungs, which constitute as-- physia and suffication but such as are not the effect of acci--dent, and aiso from causes which are gradual and extension in their operations. There are opiously 3. circumstances on which must defend the more of les to project decabonation of the Hood, the state of the atmosphere breathed; and the freedom with which the wie is admitted to the extreme pulmonary repels. According to this general devision will be arranged the Jurfacts and arguments, by which I shall allempt to defend the above florition D. But of thon cause, which influence the Ciculation Spropose to confine myself to one . vig . Exercise . _

7. Effects of Agust of Exercise on the exception of Carbone in the Leings . That a deficiency of bodily excein cause debile, and decover of the body, riquies no proof. It is equally certain that a considerrathe degree of it is newbary to in ale ordinary healthe . The O expurients of Lavoisier Toquia and other, han provid that in cause, there is a great augmentation in the discharge of carbon from the lungs in replication. The mention of one of these experiments will Suffice, as the others were followed by the Jume results Tegerin examined his own reperation in a state of rest, when it was found that 1344. subic inches of Oxygene gas consumer for how. Ofthe briskly exercising for a quarter of an how wives found that he consumed beggine at the rate of 3200 cubico inches du hour, which is 1356 cubic inches mon than when in a state of hist . Chunuto have prover that a volume of Carbonic acid gas, is precisely equal in but to that of the beggen gas which was requisite for the formations Consequently in this experiment, there was separated from the blood in crucio, for how, as much more cartered than is given out during Mest, as enters into the compositions of 1856 Cabie wiches of carbonic acid gas . With this fact perting one experiment, beforeme, I cannot consider it attogether fanciful, to Suppose that protracted inactivity of body should be productive of

Some kind of enconvenience to the system, solely from the faiture

to

of the langs to execute the due quantity of that penciple, which we all know in a very trifling exceps, Thereon Ansille deleterious offects. That tolerable health requires some exercise daily; That good health requires much; and that luxuigent and regoureds health and shought of body are found only when there is hathtent und laborious exercises Incid not spend time toprove. As it of pear then that the quantity of badon which the circulation parts with pins with the increase of exercise; and as the degree of health follows, with equal step, is is not a rational inference that this condition of the body may be in part ascisted for the pure une decarboning state of the circulating Maps? On the other hand, when exercise is almost interly abstained, from? must it not consequently follow neadoning from the above exformut, that some accumulation of baston will take place in the bloce, and this lee, of sufficient importance to Goat the well known frains of diseases which are consequent to as to quat suglect of cancers in If this accumulation of bustone to devide it must be on the supposition that its admission into the circulation by the lackals is dominition just in the proportion in which its inscription in the Lungs is restrictive. This process bal ance of think cannot wrist. The existence of such a correspondence between the Usperatory and Chylopoieties organs has never been free -- Sumer, and is incondition with the known uniform and independent actions of the latter . I suppose they that the fruity of the blood as respects the Carbonaceous matter, may vary within a citain healthy



lunge. But this lange is withing Maurio limits. I futher support that it does not require a total Omision of variese to cartonize and debase the blood below it's healthy Range; but that even the moderately indident and negligent of exercise are injured . It is could known that the blood of pring of Augoish and mactive habits is of a darker Colour than that of such as lear a different kind of Life. The following fuch related by all Bichat shows how defendant the colour of the blood is on causes which accellerates or retard its circulation. He Jays he has often observed the blood which flows during a Surgical Quation to change it's colour to dark and from that to a red again, according as the circulation was affector by the fear, faint - whomp struggles bo Cins of the Ratient. If then a surchurge of Carbone does follow-a protractor and habitual inactivity of body; I think we may infer from our knowledge of the consiguency of the mon obvious retentions of this principles, that a morbid conditions of the system must result; and to this cause in a great measure are to be referred a long train of affection, which attend an is do -Lent and Sectentary mode of life, und which though often slight do always exist. They are general debility, und education ! auspepoin, constitutiono, a languid and fuble circulation of a Lickly and Sallow-complexion Of the Skin, obitructed visconal, billions symptom, low-spirits in and utin Dand topo of sull-liet, vapour, Nightman fails on of the secution, and Charles tof.



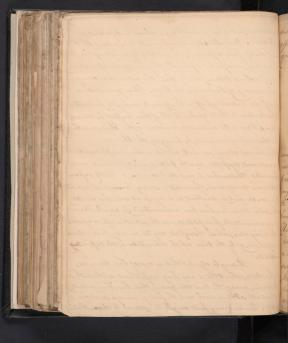
I muy be thought defecult to see how desorder, of the character of those Than named should proved from the blood being too highly charges with the carlone But I must observe, that all of those desorders or genote in a depressed and infulled state of the whole system Cam are most of them in fact, mered omptom of such a condition of the System. Now it is amply shown by the experiments of Buchat that a similar condition of body is induced by a Redundancy of Parlow in the circulation. We proved that by injecting unow blood toto an actory, the action of the artery was diminister in strength, and the part which it supplied greatly expelled. He also directed the venous blood out of the view into the Oliny by establishing a communication between thesel; and a degree of declation effect took place in the organ concined approaching to complete fluralysis. By means of a casulo: and tube the commerce content the crural acting of an animal with the carolid of another, and by producing apartial asphipio in the latter annial, the orusal artery of the former was made to receive dack ernous blood The consequence was a temporary destruction of the motion of the Leg. If it were necessary many additional facts might be brought, to prove that the effects of carbon in unusual quantities, are deady redation. The obser-- vation of every one will inform him that a well former thorax and capacious lungs, an invariably accompanied with a O . Ruddy counterance Dand Through und region of constitution ?;



and that a centraste, there are and a confunt state of the lungs are the concernituates of a fuble circulation of a falled or blush thing, purple lips, and a weak und emaciates body. Observe also the meane and halfanimated frame of the unfortunates free Courtery This de dations detien of carton may arise wither from its direct dedative quality, or from its composing with the bloor a fluid, which affords a stimular inadiquate to the motion, of health. When we reflect then how serious is the down general from a trifling excep in the circulating carbone, as officers from the above coperiments, and the familion one of holding ones breathe, well cannot be surprized that cucumstance, which have least tending to cause this excep, should in time be followed by seriable mortide effects. It is truly wonderful, as the system is placed in such a variety of detuation, and expond to the actions of such a vainty of ugents, that this decarboning function, the most exertial to animal existence ofhould be do steadily and correctly purforming as not more Juquetty to occarsion disease.) It is now admitted by the best of Jurgion, that in Weer, vicin is a valuable remedy, especially where much motions is not requires in the part when the Ulcu is dituates, in taking the coursin , It is used in many of the foreign Hospital, with success - De Jackson maker some observations highly in favor of this practice in wounds. He tills us that those British Selving who had been wounded in battle, who were turned gut of the allilitary Horpital, & followed the army soon est recovered of their sounds. Thoug remarkable that if they delayed rely a few days on the road, their Wounds grew worse, or ceased to real "The along which are most benefited by this remedy are those



huple colour, Now, Dickat, in his informents to ascartains the cause of death from asphinial, observed that by an interruption of the breathing, as in partial asphixico, the granulations of an ulces became of a levid Colour, proving that this colour was owing to a redundancy of barbons in the blood . These granulations Juguenty die and slough of . It appears to me highly probable that the Continued State of Inaction of those confined by Wound, and Mery, begets a too carbonated conditions of the blood, and the Moder operandis of exercise is, by purifying the blood. Who has not observe exercise to act like a chain in the case of the convalescent, dyspetie, and the pethisical? who has not sund the inevaled Melanchotick, and the bedridden victinde vapour and Mervous derangement, forced into a state of locomotion Dagainst his own reason and inclination, and regain at once his worted health, when Medicine had been administered in vain? There i) un unaccountable promptitude o in the restorative effects of exercie in many casy, which Asuspict can in no way be so rations any explainer, as by the tries which Than taken of the respiriting Among be objected that in case of bad wounds, and fractions, when there is very long confinement without the least ericin, mone of the bad consiguency that have been named, an obserable . That in such early the food is always smallow quantity. Builes many facts might be adduced to shee, that



there who are computed from the above cours, are light to a court of affection which our polity crowing to being for a long time disposers of courts.

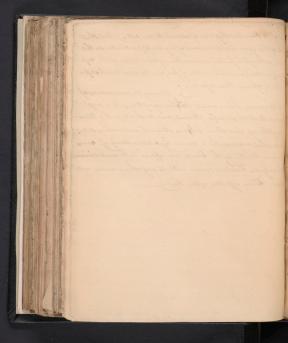
Than mentioned obesity among the desorder, from a deficiency of receive. Ur pequently see person who lead very indelent lever and who were of a lean hatit suddenty acquir such and acception of fat, as to entirely change their appearance. The quantity is increased in way part of the body, but the monan is especially observable in the mention creating what is usually stiles a corporation. have called this oragineth of fat a disorder and such it saily is . The fitness or fleshy parts of the body are rather lessened than ? increased. The fat is then a useless incumbrance, more eventsence, a morbid deposition of a substance which the system from its being subject to long inactivity had not the power of throwing out, lighte Matural outlets, but to Sevent more formidable itrouses, hat Removed it out of the circulation with receptacles when its primer would be comparatively without danger Now- it is unaskable



that by chunical analysis, Jatis found to contain lawon in the propertion of four lifts want of the whole The remaining sugar a drinds are loggene and Margain - as then during abilitioned from exercise we see the discharge of lastone in the lungs very materially abridged, and at the familion a fermation of a new Substances, composed chifty of carbon In circumstance existing to make the chighe different in quantity or quality, we we not compelled to conclude that they stand in the relation of course and effect. The conclusions is strengthened by the fact, that the aqueous exhatation from the lange, which is also diminished as well as the exerction of carbonezes compand of the changes which and the remaining conditionals of the fat, Infants have a cart Restortion of Galzbert as soon as they are cle enough to take source they three it off. In examining different classes of animals, it is found that the proportions which their fat leasy to the east of the body, is enougly as the exercise which they taken. It is also found That if they be canted according to the perfection and importance of their organs of respirations, it will be the wouse of the order in which they stands, in point of quantity of fat. Most feil and amphibious Animals abound in fat, their lungs being of the love order, while as we arrend to quadrapeds and binds en perceive less fat, and a more complete Alate of the lungs. It is well known that poulty will fallen when sheet up in our



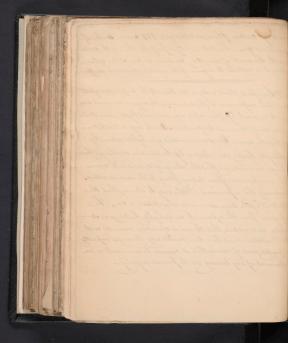
third of the time that they will if allowed to un out, But the finites of this epay will not admit of my busy particular on this heads, although a further examination of the relation of the right valory Junctions, and the secretion of fat would add much support to the Opinion Sam defending among the consequences of too lettle exercise Thave names Delivous symptoms . It is only common to su the Sedenting Student, and michair, with a Gillow tinge of the eye and Skin, belgious stomach und aching side But in what manner this is caused by a redundancy of carbonacious matter in the bloods, will appear in the ment division of the subject. Habitual exicise without any other remedies will remove bilious affections of this Kind



The effects of Raified State of the Que on the Quantity of Circulating Cathon O. as a Ranfied State of the air we breathe may appendether when its high temperatures, or in a deminations of wight in the atmospheric column, I shall observe a corresponding divisions In treating ofits consequences . 1st Offects of an Heater of musphered The experiments of De Crawford Lavoisier, and Lyun have grentaine that the quantity, Engen consumit, or of Carbons do = charged, is insuredy as the temperature of the respired air It will Suffer to mertion incorperiment, as other an similar in well-The quantity of oxygen consumed by a man in an how, when breathing and of the temperature of 54 " was found to be 1344 cubic inches. When the lair was raised to 19 and 1210 Cubic weeks of Organi gas were consumed for how; a diffune in favor of the lowe temperature of 134 artic energy. Thefer character that Carbonic acid gas is exactly equal in volume to the Coggin gas Consumed in its formation. Therefore by devations the temperatwo of the air we breather from 54 to 79 the blood parts with

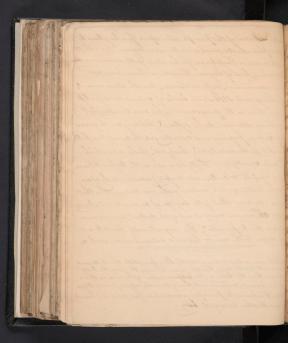
as much by carbon of hour, as enter gas 184 calic saches of content livet gas. In Bote - The patpalle them is the town lives in the amount of exercise, carbons in variations of time further, it is natural to inguin if the system does not suffer

Note. Debunford plant a dog in air Raine to the timpurature of 121! Ofte a short confinement in this detection, the organic consumed was Yound to be much life than what was consumed highir same and mad in air of the usual temperation. But he Lags notwithstan a ding that the owner, blood was unduce of a lighter colour by breathing the heater, air . But as less Carton was descharged from the lungs, he concludes that the change of actival into verway blood was preventer from taking place to the natural extent. Concerning this experiment, Thave only to observe, that the Situation of the animal was so unnatural a one; the impulsion from the exposure to air so highly heater, was so Sudden and violent, that the usual operation, connected with the Cicutation must have been moterally decanged or partly Surpender, and of course that it cannot be considered as an experiment of any bearing in the present enquiry -



from the adultions of this principle when exposed for along line to on atmospher sheater much above the usual tugree. Does the Tenneglounians, or Englishman, Jix his abode Joshi summer under the secreting heat of baguni Gunatra or Tura Sione, and feel no inconvenience, suffer no disorder, from the above cause ? de his lungs wit 2216. Cutic inches of cartonic acid gas les per dag, Than in the same season in his own Country, and yet without detriment to his system? But may not the quanlity of carton prepared, and admitter into the circulation be O diminisher in the same latio? Surely not, for his diet which in his own country was chiffy animal, in the teopical country try is (agreable to custom and necessity) almost enterely of a begitable nature which contains vastly more Carton than the animal. Su note. But if the ingress of carbone is not altered, may not the avenues convey it out of the System, and its accu mulation they be prevented ? This unquistionably must to a great degree, be the care, or he could not exist under such a

Aut. Hat more gastern is consent entitle blook by regitalle than between a list is evident house the boats there is the consense the fact of the boats much more than that latter. The budging matter of less is some their make it overgoments, comparis with Mary annual, course, beach free on ligated by, Carlone is the prescript in gradient in Jas. while it is search found in the other obtains of the body.



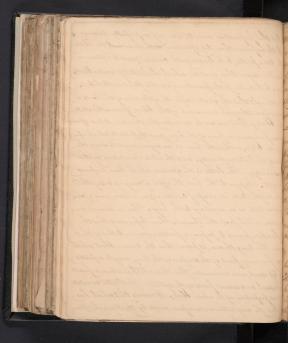
failure with function of the Lungs . Which then outhe enune toing which come to the relief of the Lungs on the burneys of the a carbonizing the blood The skin has been supports to perform unction Similar to that of the lungs. That it does so strong dufficuntly established by the experiments of bound Sedilly buch shanks and the Bench Chamists, But the quantity of culomo dis charged in this way has not been precisely determined, and is not considerables. I shall therefore in this place give it no feether allention. There are not wanting facts which go to make it highly froto Me that the live is concurred in an office of this kind. Heat greatly increases the secretion of bile, and determines to the liver. The indenie of all hot countries is believes complaints. Trangers especially during a residence in such countrie, manifest cours of pengisturcharged throughout their systems with bite even when they have escaped believes descary. Noone ever thought the miasmata of warm dimate, sufficient of thought to account for the universal prevalence of billions, direary, exclusively of the agency ofheat But die Jurap to Miamoto, In situation when miamata could not crit in sufficient quantity to cause direars, if the heat is entense, bitfood, complaints mouthely abound. It is low, that in the productions of the mortal epidemic and endinic bilious fevery ofhat countries, neasmate, may be chiefly concurred. But own here, the heat may be the Sole agent in giving the denase the character of belions. The heat may

Ś. an inter a Second West 160 eig of This die feetale to the main Van the feat of enterior hilfords any land a new tue that is the production of the most wine believes fives of hat con

approp and weaken the system outh the bile it generate, by which a predisportion is creation to four, the Measurate acting muly as the exceting cause and the liver having previously been more reports to the pudy pring cave than other parts of the body? will be most affecter, and give hin to the leading symptoms of tilping fever, which gives it its name. His afficult to perceive how measmate should ach specifically on the liver. But fet us examin Juther, what facts can be added, in support ofmy position that the diow is an apistant to the dungs inducationinging blood With The bile abounds in carbon . His found by Chemists to contain more of it than any of the other fluids of the body , See examinations of bile by Samory, Mumentae and Murray, The latter Chemist was so Struck with its predominance on the bile, that he was impolled to the conjecture, that one of the use of the liver might be to convey barbone out of the slove 2. The bile secretis from the ecuous blood It is a curious circum Stance of that all the other secutions of the body are made from the articial or flowed blood; while the bite alone is made from the Mark or carbonates blood, The reason of this peculiar economy hus bun a Source of much speculation among the physiologists; und they have finally agreed to consider it as a contrivance, hywhich the blood is prepared for the secutions of the bile, But



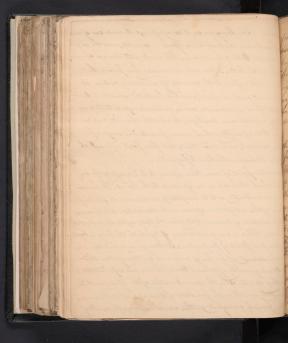
in what this preparation consists, was very imprefectly known until the improved Chemistry of medica date discovered the blood in the Una porter, to be loaded with carbon Q and to contain in To peculiar argue then qualities which characterize unous blood, and are bethe suited to the formation of such a fluid as the bile. His thought that the greater capacity of the tries, of the Parta by causing a Muzgish movement of the bloos, Jarous this Make of the blood, But are we to consider the structure to be a special ubations provisions in favor of the liver, and theparts to which it dends its bile, or that the liver is un organ made to serve the System of the Porto respecially, and the whole circulating system occasionally. The latter is the opinion which Sam disposes to adopt, Supign to the liver the office of causing out of the systems of the Sorta its except of carbona con matter, and of acting sometimes as an auxiliary to the lungs, There are several con-Siduations which favor this opinion. There before said that the thin had been proved to perform a funtion Similar to that of the Jungs. This being the case, it follows that the benows blood which comes from every part of the surface of the bedy, may be expected lobolets duck, and carbonates, than that which is utures from The central or visceral parts of the System. The Forta circulate a great proportion of the whole blood. A collects that which has Supplier the very extensive Auface made by the Stomack, plum



Mentum, the whole range of the intestinal canal, and the mesentary, a surface not much inferior to that of the mole body . This theor has undergour no change at the extreme copils like that which takes place on the Shine, and is accordingly found to be darker. and to centain much more carbon than the est of the renous More The live is known to separate this carbone, and to die charge it, in the composition of bile, of which it is the chief in great -dient. Therefore, have we not reason to suspect that a from inent un of the liver is to decarbonize the blood . If it be said that this account of the Junction of the Liver degrades this organ from the lank of a secretory to that of an exentory one fanswer, that this does not follow; for it is not to be denies that the bile answers an important purpose in the process of deges how and Chylification, and as respects the borrels is a secretio fluid. This even, then, of the origin and distination of the bile gives us one instance out of many of the simplicity and evening which water has observed in constructing the animal machine. Dinfer that the live acts at an apristant to the lungs in decar bonizing the blood, from the absolute necessity of such an assistant. The Jungs are much dependant on external circumstances, in the performance of their function, and are influenced by course which an extranion, and over-which the system has no control . Such au the variations of atmosphoric temperature and weight,



dernoise. The lings are as it were pupier; or to make use of a figure from Surice the lungs are a Gived quantity, and the exland agents With variable one . The result will always of more be as the latter . Now, who we consider how process that yestem is with respect to the quantity of circulating carbone it will contain without offener, and how hable this grantily is to fluctuate from unavoidable cause, we should expect to find in the body, a centrivance analogous to what the chemisto call a value or tube of safety, which would permit the escape of suplus cartone and save the system from fasal injury , such an office Sconceive the liver to performe. In another point of view, there appears to be a needsity for an Organ which shall act as an afsistant to the lungs. The human lody is so constructes as to be adapted to all climates, il striking intance of this adaptation appears in the dimination which occurs in the production of animal heat, when the body is places in heater vituations. This is one great means of by which the bouy is kept at one uniform froint of temperature attenage in a hot climate, could not subsist if his lungs continued to Munufaction their accustomed quartity of animal Heat. Reason and exposiments prove they do not . Now, the decarbonation of the blood must be diministred, as well as the formation of animal head in the Sungs, as they precisely correspond in their variations, being the result of



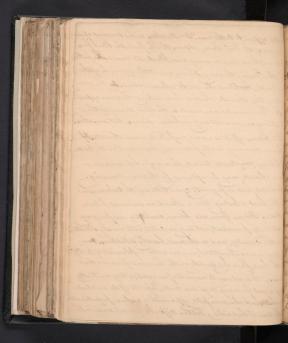
fone and the same process. But wealth and sife fortid any con Sidually relaxation of the decarbonating process. Thursbore if the Jungs aunot enabled to perform it to the ducestent, it is necessary. That the should be, and we noturally look for some auxiliary organ which shougherform a servitar Junction; but in such a way, as shall be unattended by any perceptible evolutions of Thee Calorio to augument the Unimal heat . Such an organ is doubtles the Liver. Athile Sam speaking of the relation between the lungs are the lover, Seamed but attend to the probability that is the (fortal state, the liver supplies in a measure the place of the lungs. The meconism is beyond doubt produced by the Lever, and is found in the intesting during almost the whole period of grototion. By Chemical analysis, it is found closely to resemble the adult belog and to consist chifly of carbonacevery Matter, It is dais that He blood returned from the placental lighty workshood be the termbolical view, is more flored than that is the unbelieved astroige. his may be the case und yet the live perform the office of lengs. to the business of decarbonation may be but in part executes in the lungs, while the levir does the remainder, and perhaps the histofit. Richward is of this opinion. Ileave this subject by asking the following questions. Why does the liver secrete a biliary matter in the facter, when it can answer no purpose

good the stone process. But walt was It forten Vlaker Walit. Richmans who intulion, while the hidney au not brought into actival unite after build they is the live of the father so comproportions to the unite of the tended why is the blood of the Umbelical veins made to circulate therough the substance of the lever sufore it reaches the heart and is distributed poor the whole system ?

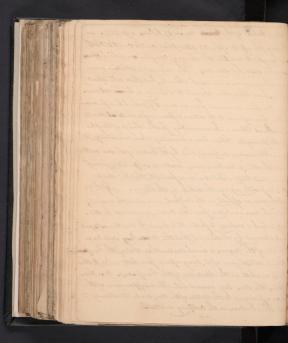
By what has been said, it is undered highly probable that the liber is un organ of more considered than has generally been attached to it; that besides the relation in which it Stanes to the intesting, it acts in a similar way with the Lungs on the whole circulations, but more expectedly on the bestral hart, or system of the porter It may be conjecture where there is a bilious colour of the skin, and other symptoms of bile in the circulation? that such symptoms may be owing merely to an obstruction in the liver and not to any increase in the quantity of bile former, nor of the materials furnished for its formations. But the best writer on bilious diseases inform us that bile exists in excep in the prima via, at the Same line that it does in the blood I Soundry say to the indemic of the West Indies in which the skin is obviously tinger with bile, there seems rather a redundancy of it in the frime via than a defi

At maybe said that it what dimate, to ben accumulate,

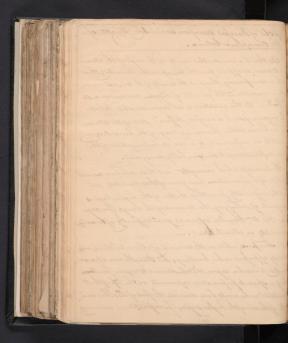
The same of the sa water meeted to terring on not beaucht but achief with with ! who is the live of the your de oregor por hours to and the hours why is the block of the tembelical reno & note circulate the reach the dulations of the liver later whathe lead and is distributes our the whole Dostant of Mary a This will appear to be the care De Matthey in his account of the disease of the East Indie, observes that he found the blood frequertly very dark and in many cases black and viscid . It's further formy that during the rainy peason, and at the approach of the Protecolouth, the blood changes to a florid colour. In the other Months in this Clemate we have never notices the same affect auces? There remarks were made on the blood drawn at the different Jeason, and not only in believes disease but somothers. (But bileous affections are not confined to warm Chanate, If my former reasoning is not fallacious, Iconocive that the tindercy to believes complaints toward, the end of a hot summer in our over Climate, may be explained by the same Marining. ou Summer, heat is prequently equal to that of the W. Indies; and when this heat is lasting there is almost an universal believes diatheris. Pilious fivers, and belious, comiting and parging. an extremely prevalent, not only in cities, and marshy situation; but in the country, and in the most healthy situations. Now it appears a more of emption, and one without plausibility, to say : that the heat has acted directly on the liver, and produce these disease, It is not easy to conceive of an agent, acting constantly on an organ for many days and louks, before its effects an at all manifestor, and when manifestio, appear with a violence proportionale to the lime it had acted. That this difficulty does not occur in the



wine Thoutaken of the town causes of bilions effections -Almong the effects of heater atmosphere, on the constitution of man, Lough's to mention the change of complexion which occurs A those who visit hat Countries . This change is striking even during a short residence in such climate; but there with spend alex thus, have their skins changed to a tawny or brown colour. White such as have descended from an ancestry justich had for many generation, been exposed to the interse influence of a vertical dund, are of a Hack Colour, In accounting for this change of Complex stone on the principle Thave been advocating, Sam not entirely Singular. Blumentar supports, that by the action of the sun on the fat under the skin, a carbona crous matter is suffaciation, giving the skin a dark tinge. Out it is more probable that this dark figment is deposited up du the cutiele by the blood. Afthe action of the sun or of heat, on the surface, was about he cans parts which were excluded from this action, would not be dir = coloured, which is contrary to fact. This known to unatamists, and was furt observed by all collected, that the mediclary substance of the brain of the negro, is much darker than that of the European; and that a cut surface of it, being exposed for a little while to the air, turns as white, as the cledulla of the European. Here there is no fat, the suns lays cannot act. The disuppearance of the Colour on expering it to the action of the air, make it intrimely) probable that Cartone is the coloring matter



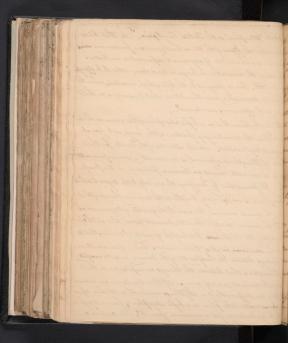
Offects of Karefied air from deminisher Might of the almospheric Column. as there is a considerable variety in the wight of the atmospherix Column, as appears from the Changes in the Parometer; there must be a corresponding change in the density of the air, and consequartly a variation in the quantity of organic contained in a given bulk - as this variation is not inconsiderable , It hall briefly enquire, if such a raisfier, diffund state of the attmosphere, as occurs within the ordinary range of the bacometer may not be so unfavorable to a clive decarbonization of the blood in respiration, as to occasion bodily decangement. The accounts which aeronauts, and those whe have accounted to the tops of high mountains have given of their desirations and adments, sufficiently prove that the air of the higher regions is incapable of satisfying the demand of the Lungs Gor ones - gener Sie Wom Hamilton experience great difficulty of breating, and debility on allount Atras. __ M. De Laufring while on the summit of Mount Blane, was Extremely oppressed in his breathing; his strength was also exhausted to such a degree that he seemed to require fourtemes as long a space to perform some experiments on the top of the Mountain as he would have done at the foot of il. This une fitnets of the air of the higher region, for resperation, is not owing



to the Oxygene bearing a smaller perportion to the newsgenesthan. it does in the lower regions. Novit is now patis furtirily proves by the Unalysis of air brought from great highls in bottles by Musually and travelles, that the constituents of our atmosphere, an in a fixed and uniform proportion at all heights . wight of the At the medium level of the Earth, Justace, when the air fluctuates, between 28 and 31, of the Mercury, the effects of light atmosphere are Similar, though lep in degree, Whenthe Sarometre Sinks to 28, indicating what is oulguly denominates , a heavy air, but which is the reverse, our feelings are musturally changes, Every one complains of lassitudes, debitity, und low Specits; many of headach, loss of appetite, diois-Jines und veitigo. The circulation, and other Motions of Life we depressed and infublio. We feel as if our bodie, were subject that to the action of some seductive and debilitating agent The phlegmatic, hypochondrick, consumptive, and arthmatic duffumort. These effects have been imputed godely to the lop of Otorospheric pressure which the body sustains. That this lofs of hopen may afrest in producing them, is ony possible; but that it is the sole or principal cause is without any proof. The consequences of deminishing the mechanical support which the air affords to the body, such as the expansion of the circulating fluids, distinsing of the trains and arterior, to are imaginary, Supothe writer



of the article "Utmophere" in the Betish Enoulepine, In that kinds I weather when the figure of the air is least, we never precise our veing be swell, nor are we sensible of any invair expansion in our bodies. the bontrary the circulation is languido and sums rather to be offered. at by a weight. Even in going up to the tops of high mountains, where the Transhire is dominisher more than I time, what it usually is on the plains, no such appearances are observer. Mmay be shown that in a light atmosphere of their occur such an inturupted in the Mecalenizing function of the lungs, as to family in adequate toplanation. In the Minutes of the Society for the primetion of Milisphical experiment is an account of some experiments made by an eminent chemist on denimals placed in an air fremp becover. He proved that by Raciforning the air only both disput toward the atmosphere is occasionally brought in the ordinary changes of the Weather, the animal consumer but one half the quantity of leggue, which I want the common dearly . From this, it would follow, that at 28 of the bacomition, the blood laste but half the quantity of carlon that it Mos, at the medicine height of the baromerer; that is if we admit an unch analogy between the carefice air of the lower, and the raseful almosphere , and that between the changes on respires in in the lungs of the animal, and of man, Afthere analogies an not exact they are sufficiently to. If then, or remarkable a returnion of Controcision matter take place in a light atmospher g hower it possible that the bear should not feel inconvenience from it? The carbone of



the circulation in more than the irreal quantity, has been probed be he statione, dimensioning or producting the energy of the metions of life, We should theyor expect a priori, that this condition of the almophen Quould occasion disorder, and precisely such disorders as have been mentioner . Asthmatic paroxyims are evidently indicated by this caun, especially in those who are subject to theme. Every asthmatic finds a light atmosphere, his bane, When the blood is not sufficiently decarbonates in the Lungs, its flow back to the heart is slow and langue, causing the blood to collect in the extreme pelmonary velsels. The uncasings thus creater throw the lungs into De Bu inumerates light air among the causes of asthmal, and suppose it to act by its not imparting a sufficient quantity Organe to the blood.

The arthmatic is much anywe by damp weather, y dich may are from the Causy, bets. The haripes state of the air with which dampings is almost always accompanies. The the most he most for most as a given back of air. It life much be that you artist of atom pheric Copyens, and proportionally the life first you artist of atom pheric Copyens, and proportionally the life first want to which air be to unswer the proportion of defination.

Another circumstance which prove that authors frequently alfunds on the cause Than marking it the paragram attracting founding at Night when the desposion Defall consists Jacous a

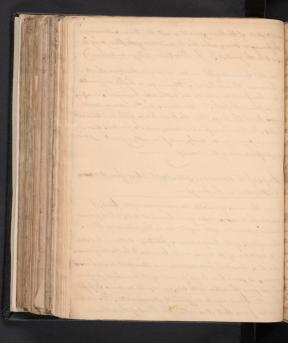


carbonatio state of the blood zand it is not lite towardsolvening, that the francism crease when this Carbonation of the blood may be supposed to the greatists (See Beat the Steyer on testimo)

From the Uccount of the residence of Use the experience should a bise promouse the inholation of the general gas, or highly organistic arrive to a broughout remode in an extendition for some desidence that have proved the fact. The Stadens day, In some desidence organises that the large, than the biness day, In some of the Counterman of the Counterman

I Imperfect decadenization before New from Museus Obstruction in the Lungs -

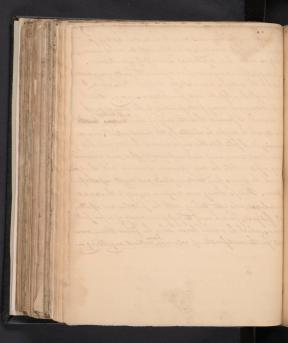
Among the cause of depotive decadenizative of the blood, I magnington themus our matter in the broughest late, which provide in the broughest late, which provide in setting a gifter being acoust of featuring. Asknow, but this being acoust of featuring. Asknow, but this being the mung on the franchise to be the the third come. But when it is considered how constant, and at materity in such cases whis musery is sance how deep featured of the brought of superior the contents of the deep the transfer of the deep the last materials of the definition of the decades atte. The other of the definition of the definition of the deep of the destination of the definition of the destination of the desti



is unusually darke; his circulation slow and feelled; there is quat attiting of badily strength and vigous; the heat of his July is much below the common temperature, the extremities are Morago cold; the complexion is puts or dark and levider in short he represents a degen, all that carriety of electory, and infriently, to what the unfortance the they is a victime. But what is futher, still more in point, is the colour of the matter thrown out of the lunes, - Bu says he has frequently dan the Much expectiontes in asthma, of a black colour. Morgagnis, in his dissections of those who died of asthmaz speaks of relections of a black subtance in the lungs, which on being Mutho in the fingers, appeared to consist of a Carbon rions flowder. Dr. Morten observed such as laboured under pituitous how to expectorate a black mucus in the Morning Willis takes Notice of the Same thing. -This view of the luiture as time malls in to account for the very smarkable offices of emilies in this disease, as well as in Consumption, They throw out the oflucus, and instead of beaking, they invigorate the whole frame. Perepresence is attended with more debility, more malignancy, and is more apt to sink the system into a typhus diatheris Than the planitio vera, or other local inflamations, may this not arise from the obstruction, which the muces living the bronchial surface efford, to the necessary decarbonization of the blood. _



Defore concluding it is sweembert on me to make some apology for this spays And be considered, and I pear with too much reason, not only as nord, but hypothetical, and willly speculation. Smust confes, that at my outset, had I forwar the failty of my mater rials, and the geotrogue and unshapely structure Two about to raise, I might have left the work for a future visionary, But I thought I discovered many facts pointing to the deduction I have deavened. I famile that the Subject had been boother within it, which might be clicited by the investigation and in commencing it, I felt like the eager mineral hunter, who had wandered into some wild, and unfrequenter spot, and commenced opining a fit : while his only abusance of meeting with the objects prearch he derives from the unsuplosed, and reggle aspect of the place. Perhaps I may new compace myself to the same ninera logist, who after loiling with his pickage and spade, until fatigues, finds himself in possisions morely of a few patts specimens, which he would leave when he found them, were not for the mortification of returning without any thing ...



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